

# Supporting the stakeholders of construction



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# THE SCIENTIFIC AND TECHNICAL CENTER FOR BUILDING

A public body for innovation in construction, the Scientific and Technical Center for Building (CSTB) ensures the quality and safety of buildings and supports innovation, from idea to the market.

It develops scientific and technical excellence in construction and urban planning to prepare for tomorrow's challenges, meet society's expectations for well-being and safety, and support stakeholders by providing services and optimizing operations.

## ASSISTING STAKEHOLDERS

Supporting public authorities

Aiding the entire sector

Providing local services to innovative companies

Participating in public and private partnerships in France and abroad

To address the issues of the ecological and digital transitions, the CSTB organizes its activities and resources around:

**5 ACTIVITIES**  
Research and Expertise, Assessment, Certification, Testing, Dissemination of Knowledge

**5 SCIENTIFIC AND TECHNICAL PRIORITIES**  
Energy & Environment, Health & Comfort, Risk Mitigation, Digital Technologies, Economy & Uses

**3 LEVELS**  
Material, Product and Component / Building / Neighborhood and City

To learn more, visit, [cstb.fr](https://www.cstb.fr)



## Support services for innovative companies

**ARIANE**  
ACCOMPAGNEMENT DES INNOVATEURS

Focusing on VSEs/SMEs and start-ups, ARIANE works with all creators of innovative processes or services in the construction sector.

<http://evaluation.cstb.fr/en/cstb-and-you/innovation/ariane/>

**RNA**  
RESEAU NATIONAL  
D'ACCOMPAGNEMENT

The CSTB coordinates a national network of partners, providing scientific and technical support all across France.

<http://evaluation.cstb.fr/en/cstb-and-you/innovation/rna/>

**CSTB lab**  
accélérateur de start-up

CSTB'Lab promotes technology transfer, capitalizes on the results of the CSTB's research, and creates an ecosystem to support innovative companies.

[www.cstb-lab.fr](http://www.cstb-lab.fr)

# By your side, from idea to the market

To encourage the emergence of sustainable innovations and improve our living environment, the CSTB guides stakeholders at every stage of their projects. It provides its scientific and technical expertise in construction and urban planning, its knowledge of regulations, and its skills in project development. Through information services and solutions for specific needs, the CSTB guides project developers, from idea to the market.

88%

of company heads confirm their desire to innovate in the next three years

# RESEARCH AND EXPERTISE

*The CSTB guides socioeconomic stakeholders in the various phases of the innovation process through research partnerships, consulting projects, technology transfer and customized training programs. It offers its multidisciplinary scientific and technical knowledge to companies to transform their ideas into sustainable projects and ensure their integration in buildings and cities. Exchanges between the CSTB and stakeholders in the sector advance knowledge and constitute a key driver of research.*

Developing a simulation tool for pool energy consumption

“The scientific expertise and know-how of the CSTB enabled us to develop an advanced technological solution that is making a difference in our sector today. In the eyes of our customers, forging a partnership with the CSTB, widely recognized in the sector, is a way of guaranteeing reliability.”

**SYLVAIN GAUTIER**  
Project manager – Hydraulics engineer at Procopi

## ► STIMULATING AND SUPPORTING INNOVATION

To design the buildings and cities of the future, the CSTB provides stakeholders with hands-on knowledge and a solid scientific foundation for their projects. It participates early on in projects, starting with the design phase and continuing through execution, to facilitate work under constrained conditions. By transferring technology across scientific disciplines and between industrial applications, the CSTB helps innovation to flourish.

## ► CHARACTERIZING INNOVATION AND MAKING IT RELIABLE

By applying its scientific knowledge to varied projects, the CSTB provides innovative methods and solutions to stakeholders to achieve a performance-based approach in the design and operation phase. The goal is to help them develop their projects reliably and sustainably. The CSTB’s strength lies in its combination of experimental and digital approaches, from verification of concept and prediction of performance to laboratory testing and on-site experimentation.

## A MULTIDISCIPLINARY OFFERING



ENERGY & ENVIRONMENT



HEALTH & COMFORT



DIGITAL TECHNOLOGIES



URBAN DEVELOPMENT



MAJOR STRUCTURES



TRANSPORTATION

The CSTB’s Research and Expertise offering is built around six specialist areas that address the requirements of various sectors, using disciplinary expertise covering all the challenges

related to construction and urban planning. Throughout a project, a single contact person ensures follow-up between the various experts.

## ► RESEARCH AT THE CSTB

Research at the CSTB is organized around five scientific and technical priorities, making it possible to conduct multi-criteria scientific and technical analyses encompassing all aspects of sustainable development, as well as the cross-disciplinary approach that defines the CSTB.

With its partners, the CSTB is continuing its multidisciplinary research projects in response to calls for tenders from organizations such as the French National Research Agency, ADEME (the French Environment and Energy Management Agency) and the European Commission. It mobilizes its expertise for public authorities to address national priorities in the areas of energy, the environment, health, safety and digital technologies.

*Dalkia, EDF and CSTB research partnership: developing innovative devices to prevent limescale build-up in thermal systems and domestic hot water systems.*



## THEY PLACED THEIR TRUST IN US IN 2016...

### ENERGY & ENVIRONMENT

Real energy performance, indoor air quality in housing units



### HEALTH & COMFORT

The Internet of Things for remote medical monitoring



### DIGITAL TECHNOLOGIES

Urban development with BIM



### MAJOR STRUCTURES

Aerodynamics studies, supporting innovation



### TRANSPORTATION

Safety in road tunnels and rail stations



# TECHNICAL ASSESSMENT OF INNOVATIONS

*Innovation assessments performed by the CSTB provide construction professionals with reliable information about the performance and durability of components (systems, materials, elements, equipment, etc.) for well-defined usages and installation conditions in compliance with regulations. The CSTB helps stakeholders in the industry prepare their applications for technical assessments. The procedure is a key factor in gaining the trust of stakeholders and making it possible for innovations to reach the market, safely.*

IN 2016

175

New Technical Application Documents (DTAs)



+10% ATecs/DTAs issued in 2016 compared with 2015

## OUR SERVICES FOR REGULATORY AFFAIRS

*The CSTB is a key body for services concerning regulatory compliance in the construction sector, whether for documents made mandatory by regulations or those that are optional to add value to products and systems.*

► To learn more, visit: <http://evaluation.cstb.fr/en/regulatory-services/>

## ► TECHNICAL APPRAISAL (ATec)

The Technical Appraisal is the opinion formulated by a representative expert group of professions, called a Specialized Group (SG), on the fitness for purpose of innovative construction systems. Technical Appraisals are issued by the Commission responsible for Issuing Technical Appraisals (CCFAT)

(article 8 of the order of March 21, 2012). The CSTB, member of the CCFAT, acts as an assessment body for Technical Appraisal applications and reports on them to the Specialized Groups.

► For more information: <http://www.ccfat.fr/>

## ► PRELIMINARY TECHNICAL EVALUATION OF MATERIAL (ETPM)

When an innovative material is used in a product for which an assessment of fitness for purpose has been requested, it may be necessary beforehand to perform a Preliminary Technical Evaluation

of Material (ETPM) to assess its properties (for example, durability).

► To request a Preliminary Technical Evaluation of Material (ETPM), contact ARIANE.

## ► EUROPEAN TECHNICAL ASSESSMENT (ETA)

ETA requests are voluntary but are a prerequisite for establishing Declarations of Performance (DoP) and affixing CE marking to products not covered or only partially covered by a harmonized European standard.

► To request an ETA, contact <http://evaluation.cstb.fr/en/european-technical-assessment/#contacts>

## ► TECHNICAL EXPERIMENTATION ASSESSMENT (ATEX)

Technical Experimentation Assessment is a fast-track procedure for technical assessments formulated by an expert group for all innovative products, sys-

tems and equipment. This assessment often takes place before a Technical Appraisal or for unusual projects.

- To request an ATEX, contact the expert for the product family:  
<http://evaluation.cstb.fr/en/technical-experimentation-assessment-atex/#contacts>

## ► TRANSITIONAL TECHNICAL ASSESSMENT (ATT)

Created in 2017 at the request of professionals, the Transitional Technical Assessment (ATT) is a procedure that applies to construction systems that are no longer eligible for the Technical Appraisal procedure but that do not yet have reference documents, which are essential to satisfactory deployment of a traditional technique.

- For more informations:  
<http://evaluation.cstb.fr/en/>

IN 2016

131

Technical Experimentation Assessments



*ATECs/DTAs issued in 2016  
compared with 2015*



## CERTIFICATION FOR QUALITY



*Through its certification activity, the CSTB supports construction professionals who are committed to quality. By marketing information on the quality marks it issues, the CSTB promotes the visibility of certified products and strengthens their differentiation on the market. It thus guides stakeholders in the commercial development of their activities, while increasing user trust in the benefits of offerings.*

### ► CERTIFICATIONS OF PRODUCTS AND SERVICES

To simplify the landscape of certification in the construction industry, maximize the clarity of benchmarks for quality, performance and reliability of products, services and contractors, the CSTB launched **QB – Quality in**

**Building**, at the end of 2015.

This new certification mark will gradually replace the CSTBat, CSTBat Service, Certifié CSTB Certified and UPEC CSTB marks. Other certifications: NF, ACERMI, eu.bac Cert.

“The QB mark, which is easily recognizable, enables us to differentiate the know-how of our SME on the market.”

GILLES PRÉVOST  
CEO of Acodi

► For general questions about certification, contact ARIANE.

IMMD-LEA, university campus in Roubaix. MAES Architectes Urbanistes. On the facade, composite aluminum panels, with three different finishes (one glossy and two brushed), assembled with the “stone joint” method for a patchwork effect. QB-certified products.





↑ First office building committed to obtaining the E+C- label, certified by Certivéa: Opération Thémis - ICADE.

## CLASSIFICATIONS

Classification identifies performance levels based on the characteristics of products and their usages. It helps specifiers to choose appropriate products for targeted uses.

**The CSTB offers several types of classifications in the following areas:**

- 1/ Floor coverings
- 2/ Valves and fittings
- 3/ Roofs and related products
- 4/ Facade cladding
- 5/ Glazed products
- 6/ Accessibility products

## STAKEHOLDERS AND WORKS

The mission of two CSTB subsidiaries, Céquami and Certivéa, is to support progress in sustainable construction for both new and renovated buildings: Céquami, in the private home sector, and Certivéa in the commercial building sector. These key organizations help professionals raise their skill level and attest to the performance of their work through dedicated tools and services, including certification.

Certivéa

Céquami

## TESTING

*The CSTB testing services make it possible to verify that products and systems properly perform their functions for the durations of their life cycle. Tests also analyze their contributions to a building's overall performance. The CSTB provides stakeholders with a comprehensive approach that optimizes the organization of tests.*

*The tests, accredited by COFRAC, the French accreditation committee, are performed as part of an assessment, certification or CE marking process. They can also be used in the research phase to characterize the performance of new concepts. The CSTB can then develop specific protocols. This provides stakeholders with reliable experimental data to optimize their innovations.*

### TEST FACILITIES

The testing activities are accredited by COFRAC, the French national accreditation body. The accreditation numbers are 1-0300, 1-0301, 1-0302, 1-0304, 1-0305, 1-0306, 1-2122 and 1-1542 for tests and 2-1930 for calibration of anemometers. Scopes of accreditation are available at [www.cofrac.fr](http://www.cofrac.fr).

The CSTB uses its advanced test facilities, test benches and equipment, which it updates regularly, to conduct tests, from very reduced-scale to full-scale 1.

It enriches the test results with digital simulation when a combined approach is appropriate.



01 **VULCAIN**  
Fire test facility



02



03



04

**02 Oscar Niemeyer Room**  
Interactive virtual  
simulation space

**03 LABE - European  
Laboratory of  
Building Acoustics**

**04 Windows  
and Glazing  
Laboratories**



Watch the video on the CSTB  
YouTube channel

## DISSEMINATION OF KNOWLEDGE



### NEW ONLINE SERVICE

**Bati CCTP, complementary to Reef, offers continuously updated information on construction regulations. It provides professionals with a tool that generates complete Contractual Special Technical Specifications (CCTP) in a simple manner, both for new buildings and renovation projects.**

*The CSTB makes scientific information and technical standards accessible and immediately usable through publications and information services, business software packages and an array of professional training courses for in-company groups or for individuals. In this way, the CSTB shares knowledge with professionals concerning performance requirements, the changing regulatory environment and the progress of innovations.*

### ► BATIPÉDIA: PORTAL FOR TECHNICAL STANDARDS

A unique CSTB portal, BATIPÉDIA features all the online resources and services essential to managing projects: Reef, DTU, calculation software and tools, and more.

Practical and continuously updated, it provides personalized access to meet the needs of all sector stakeholders.

BATIPÉDIA is a key website for complete and tailored information on technical standards and specialist areas.

[www.batipedia.com](http://www.batipedia.com)

**BATIPÉDIA**  
*le référentiel de la construction*

↓ *Training in the use of window products, in Grenoble, launched in late 2015. It combines learning-by-doing and realistic exercises with theory and practice; so that stakeholders can update and increase their knowledge and technical skills.*



## ► SOFTWARE TO IMPROVE PERFORMANCE

CSTB software solutions are an aid for design and assessment, guiding stakeholders in the construction sector and cities to improve the performance of their projects: energy, environment, acoustics, lighting, airflow management,

and more. In a context of energy and digital transition and digitalization of uses, these software solutions help manage the far-reaching transformation of professional practices.

## ► CSTB TRAINING IN CUTTING-EDGE FIELDS

Given changes in regulations, industry standards, technologies and innovative materials, as well as organization and procedures between stakeholders, sharing and updating knowledge is crucial.

With this in mind, CSTB TRAINING offers professional training courses for in-company groups or for individuals.

Digital transition and environmental performance in construction are major challenges in the sector. The CSTB guides the upskilling of stakeholders through new training modules, including face-to-face and distance learning.



## TRAINING

### BIM digital technologies

A new training module, “Becoming a BIM Advisor,” is being deployed in 2017. It is offered by the CSTB to certify skill levels and make it easy to identify professionals who have mastered BIM technology.

### Environmental performance

In a context of stricter environmental requirements, the CSTB has expanded the training it offers in environmental standards and accreditations.

Project owners who call on these recognized experts have the guarantee that their certification applications will be optimized and the overall process of their projects will be properly adapted.



## SOFTWARE



### New version of ELODIE

To meet today’s environmental challenges, the CSTB has updated ELODIE, the life cycle assessment (LCA) software for the construction industry.



### New version of eveBIM

The eveBIM viewer now offers a multi-scale view of projects. This software provides views and navigation of buildings and cities, using BIM avatars, with optimized functionalities.



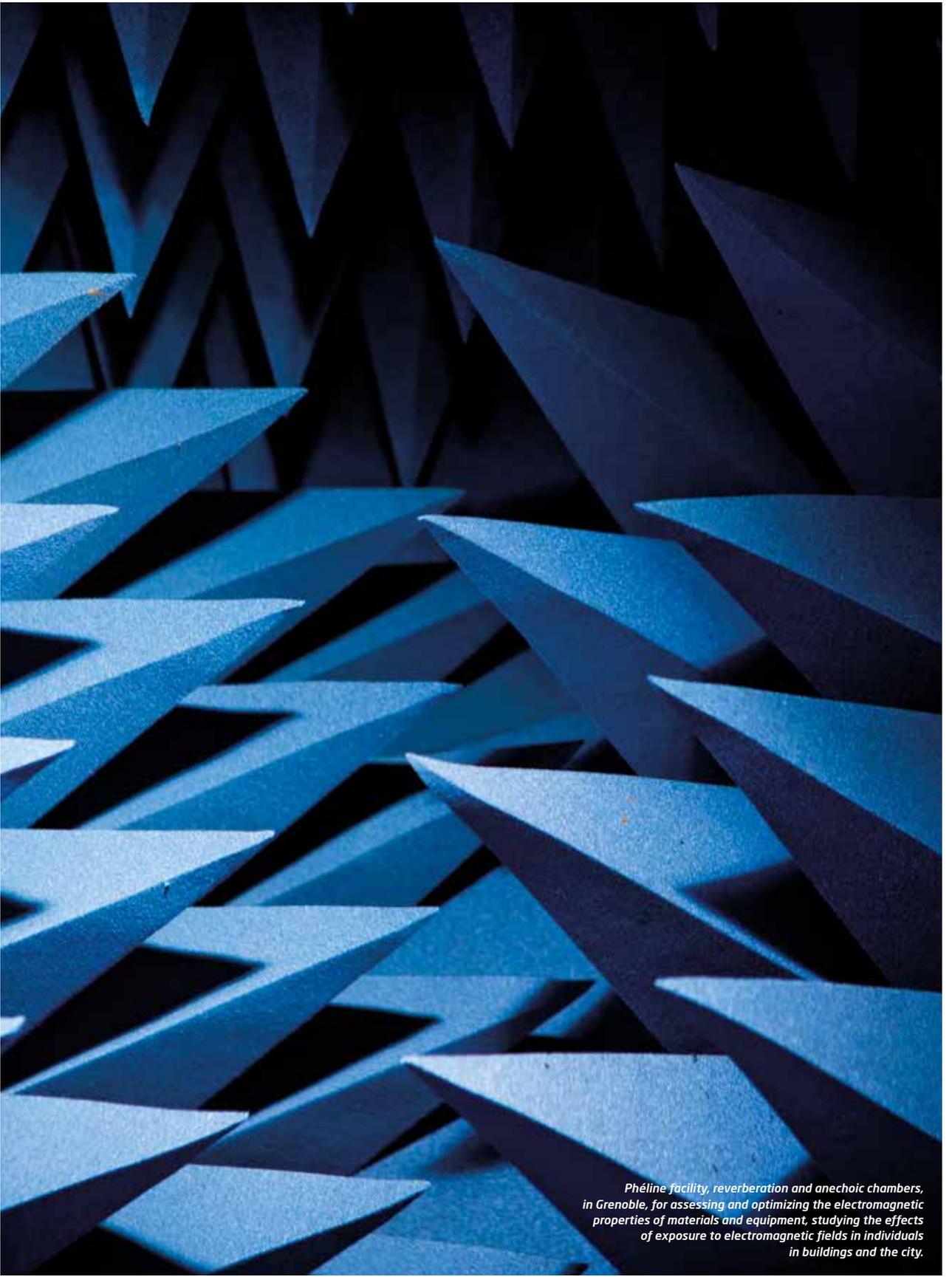
↑ eveBIM viewer

# Scientific and technical excellence

**M**ore than ever, construction and regional development projects must include energy and environmental efficiency, cost control and usages to sustainably improve the quality of life of citizens. CSTB teams are mobilizing all their scientific and technical competencies and putting them at the disposal of public and private stakeholders to guide innovation in materials, components, buildings and the city.

“The building industry has rarely experienced such a transformation, with the environmental transition, the digital revolution and a great wave of innovations to be embraced. These transformations in the industry coincide naturally with the CSTB’s key missions. Thanks to its experience and the complementary nature of its Research, Expertise and Assessment activities, the CSTB can accompany these changes.”

**ÉTIENNE CRÉPON**  
President of the CSTB



*Phéline facility, reverberation and anechoic chambers, in Grenoble, for assessing and optimizing the electromagnetic properties of materials and equipment, studying the effects of exposure to electromagnetic fields in individuals in buildings and the city.*

# AT THE LEVEL OF BUILDINGS AND COMPONENTS

## Material

### ► HIGH-TEMPERATURE BEHAVIOR OF CONCRETE USED FOR THE GRAND PARIS EXPRESS TRANSIT LINES

With new and extended lines, the Grand Paris Express metro system involves the construction of many tunnels and therefore the use of various types of concrete that must meet technical performance requirements (mechanical, fire resistance, durability, etc.). Industrial companies and contractors

working on the projects face two primary imperatives: choose the most appropriate concrete formulations, and assess the structures under conditions as close as possible to reality. The CSTB shares its knowledge of materials and concrete spalling caused by fire exposure, as well as **its Vulcain test facility**.

## Water systems

### ► HEAT RECOVERY FROM GREYWATER TESTED UNDER REAL CONDITIONS

A CSTB research team worked on estimating the potential for instant heat recovery from greywater, thanks to the Simulhome experimental facility at the Aquasim test facility. **Simulhome** reproduces **domestic water** use realistically in a standard-equipped housing unit.

Research and test facility for sustainable water management in buildings.



Concrete structure after a fire test, Vulcain test facility at the CSTB, Champs-sur-Marne.



## Structure

### ► STEPPED TIMBER FRAME WITH INVISIBLE SEAMS

Wooden beams make up the stepped structure of the huge roof covering the Aqualagon, the future water park of Marne-la-Vallée. They were manufactured by Arbonis using an innovative assembly technique, which received a favorable ATEx assessment in early 2016.

*Stepped timber frame of the Aqualagon water park in Villeneuve-le-Comte, France. Client: Villages Nature® Paris. Project manager: Jacques Ferrier. Structural Work, Framework and Facades: Chantiers Modernes and Arbonis.* →



## Facade and roof

### ► INNOVATIVE GREEN ROOF FOR LASCAUX IV

Centre International de l'Art Pariétal Lascaux IV (International Centre for Cave Art), which exhibits a reproduction of a prehistoric cave with paintings, has a green roof that blends into the wooded landscape of the Dordogne region. **The roof slope required an innovative design:**

700 bollards hold the insulation material and vegetation in place over a roof of 7000 m<sup>2</sup>. Designed and installed by the company SNEI, which specializes in weatherproofing, this system underwent a Technical Experimentation Assessment (ATEX).

↙ *Greening system installed on roof with steep slope, using bollards. Innovative system assessed by the CSTB.*



## Health & Comfort

### ► ASBESTOS IN BUILDINGS: RESEARCH FOR BETTER MANAGEMENT

To support the renovation of housing units by removing the obstacles associated with the presence of asbestos in buildings, the CSTB is developing innovative tools as part of the Asbestos Research and Development Plan, launched in June 2015 by the French government to reduce the time and costs of asbestos removal. These tools improve the on-site detection and measurement of asbestos and the management of construction sites with a risk of asbestos exposure.

↙ *Laboratory model for sampling potentially asbestos-laden materials, CSTB R&D.*



# AT THE LEVEL OF BUILDINGS

## Environment

### ► “E+C- EXPERIMENTATION” INITIATIVE AND ITS ASSOCIATED LABEL: COLLECTIVE MOBILIZATION



Jointly launched by public authorities and construction industry stakeholders in November 2016, the “E+C- Experimentation” initiative and its associated label evolved from several years of collective groundwork. As a partner, the CSTB contributed to the development of the benchmark,

criteria, and desired performance levels. With recognized expertise in energy and carbon, the CSTB is sharing its knowledge and services to support the mobilization of all involved in experimentation to develop positive energy buildings with low carbon footprints.

## Energy

### ► ENERGY PERFORMANCE AND INDOOR AIR QUALITY IN HOUSING UNITS

A five-year R&D partnership agreement, signed in January 2016, brings together 3F Group, the top social housing builder and operator in France, and the CSTB. Their collaboration covers experimental works in four areas: Energy & Environment, Health & Comfort, Digital Technologies, and

Economy & Uses. The aim is to drive innovation for sustainable buildings, neighborhoods and cities. 3F made its building stock available for the experiments, and the CSTB supplied its innovative methods, ISABELE and REPERE, to measure and analyze the energy performance of buildings.

“For a group like 3F, it’s an opportunity to offer high-level researchers a unique sampling in France and advance the entire chain.”

YVES LAFFOUCRIÈRE  
CEO of 3F



Measurement sensors deployed under the ISABELE method.



▶ Watch the video on the CSTB YouTube channel

## Health & Comfort

### ► CARMENCITA: ACOUSTIC VARIABILITY FOR SMALL VENUES

Symphony, opera, or chamber music – It is now possible to adapt the acoustics of small- and medium-sized performance venues to the type of performance, thanks to an active acoustic system: CarmenCita.

Developed by the CSTB, CarmenCita benefits from the technology of the Carmen system, designed for large venues.

This innovative system is now operational and on demonstration for professionals at the CSTB in Paris.



↑ Interface and active electroacoustic cell.

## Risk mitigation

### ► A CHIMNEY THAT RESISTS HURRICANES AND IMPROVES NATURAL VENTILATION

The CSTB has developed a hurricane-resistant chimney which reinforces houses in hot regions subject to hurricanes. This innovation enables a building to withstand a hurricane and gives it optimal natural ventilation, reducing the need for air conditioning. Now, the CSTB has built a prototype, which will be tested in 2017 in the **Jules Verne wind tunnel** in Nantes and then sent to Florida to confront a real hurricane.



↑ The central chimney of the hurricane-resistant bungalow helps the roof withstand extreme winds and generates natural ventilation, thanks to trade winds.

## BIM digital technologies

### ► HIGHER EDUCATION IN THE PARIS REGION GETS STARTED WITH BIM

The Public University Development Agency of the Paris region (EPAURIF) and the CSTB have begun working together on BIM technology. Their objective: help universities and other institutions of higher education to implement this new way of improving the construction and operation of their building stock.



# AT THE LEVEL OF NEIGHBORHOOD AND THE CITY

## Environment

### ► DEVELOPING A METHOD TO ASSESS INTERACTIONS BETWEEN URBAN SYSTEMS AND BIODIVERSITY

Measures to protect biodiversity have been strengthened in the regulations on urban development, particularly with the Act on the Protection of Biodiversity adopted in 2016. The objective is to provide the stakeholders of development and construction with indicators and tools to assess the impacts which buildings and neighborhoods have on biodiversity.

At the end of 2016, the CSTB signed a three-year partnership with the National Museum of Natural History and EPA Marne.

Its aim is to develop a reliable method of assessing interactions between urban systems and biodiversity.



Representation of the results of a study on including biodiversity as a criterion in urban projects, on the level of a building and a neighborhood. The type of representation is a question tackled by the research as part of the project.

## Energy

### ► WITH DIMOSIM, DEVELOPING AN ENERGY MASTER PLAN FOR “PAYS SUD”



The municipality of Barcelonnette, the Pays Serre-Ponçon-Ubaye-Durance (Pays SUD) Association, and the CSTB have joined forces in a collaborative research project. The aim is to study the energy strategy of these local areas in the county of Alpes-de-Haute-Provence, using Dimosim. This prospective engineering software developed by the CSTB simulates and compares various scenarios for 2030 and 2050 to improve planning for changes to the local energy system.

#### Challenges of experimentation

The project emerged from two aims. The local governments of Pays SUD want to find a new economic dynamic through energy transition. Their economies are now essentially based on winter tourism at their ski resorts. The infrastructure for the production and distribution of energy is sized to meet demand during seasonal peaks, and the potential for the production of renewable energy is high in relation to the needs of the population.

## BIM digital technologies

### ► BIM-CIM SUPPORTING LOCAL AREAS

A three-year research agreement was signed in June 2015 between EPA Bordeaux-Euratlantique and the CSTB, expert in digital technologies supporting construction in local areas. Under the agreement, the CSTB will support EPA Bordeaux-Euratlantique in the

implementation of digital technologies, applied to several pilot projects, such as the use of BIM for the development of the Belvédère district. The aim is to make Bordeaux a smart city by using the City Information Model (BIM-CIM).

“BIM is more than a tool; it's a revolution in the way of designing buildings. It is also the best means for conducting projects to make them more lasting, sustainable, and relevant in their design.”

**STEPHAN DE FAÏ**  
CEO of EPA Bordeaux-Euratlantique

▶ Watch the video on the CSTB YouTube channel

## Major Structures

### ► LA SEINE MUSICALE: ARCHITECTURAL FEATS, INNOVATIVE SOLUTIONS AND PROFESSIONAL COLLABORATIONS

La Seine Musicale opened its doors in April 2017 in the heart of Jean Nouvel's urban design, at the tip of Seguin Island in Boulogne-Billancourt, bordering Paris. Designed by architect Shigeru Ban in collaboration with Jean de Gastines, this cultural venue consists of an auditorium and modular performance hall for concerts and public events. During the design phase of the unique architecture, the CSTB helped stakeholders meet their technical challenges.

Aerodynamics experts performed wind loading studies for the building and solar sail, and advisors assessed the green roof and glass facade.



# The CSTB around the world

**I**nternational openness promotes exchange between researchers within a network of excellence, contributing to advances in the fields of interest covered. The CSTB, a scientific and technical contributor in Europe and worldwide, continues to develop partnerships with similar organizations in Europe, French-speaking and Spanish-speaking countries, Asia and Australia. The priority areas are energy and environmental performance, construction quality in the face of global warming, public health issues, quality of life in cities, adaptation of housing to aging populations, and digital technologies.

In addition, cooperation between the CSTB and its international partners concentrates on aligning scientific and technical methods of assessment and testing. Strengthening exchanges has already proven beneficial to the quality of products, while boosting exports by industrial companies.

### *Australia*

#### ► ADAPTATION OF THE BUILT ENVIRONMENT TO CLIMATE CHANGE IN AUSTRALIA

Sharing with climate change researchers beyond the European network was one of the main aims of the CSTB's scientific visit to Australia in 2016, hosted by the Commonwealth Scientific and Industrial Research Organisation (CSIRO), with one priority: Improve adaptation.



### *Morocco, China and Colombia*

#### ► CERWAY MANAGING HQE FOR URBAN PLANNING

The Moroccan eco-city of Zenata received HQE for sustainable planning certification by Cerway, and was awarded the “Eco-City” label at COP22 Marrakesh in November 2016. The newly launched Eco-City label was developed based on the requirements of HQE™ for urban planning certification. As the first city to obtain the label, Zenata is a model for emerging countries, especially those in Africa.



### *Spain*

#### ► TECNALIA AND THE CSTB JOIN FORCES

Tecnalia, a leader in construction research and new technologies (nanotechnology and ICT) in Spanish-speaking markets, began working with the CSTB in 2016 to conduct joint research projects in the following areas:

- > Energy efficiency and environmental performance (new and renovated buildings, city scale)
- > Digital technologies BIM and software solutions
- > Adaptation of the built environment to aging of the population and to people with disabilities.

# Key figures 2016

## Employees

as at December 31, 2016 (excluding subsidiaries)

**906** employees

<b>661</b>	<b>89</b>	<b>84</b>	<b>72</b>
Champs-sur-Marne	Nantes	Grenoble	Sophia Antipolis



## Operating income

(excluding subsidiaries)

€ **104.7** millions

€ <b>23.34</b> M	€ <b>13.82</b> M	€ <b>48.05</b> M	€ <b>5.73</b> M	€ <b>13.76</b> M
Contract research and Consulting	Government grants	Technology-related activities	Dissemination of knowledge	Other income*

\* including contribution of re-accounting: M€10.34

## Technology-related activities

**131**

Technical Experimentation Assessments (ATEX)

## Certification of products

**4,666**

Active certificates

## Research and Expertise

€ **11** M Contract research and consulting with private stakeholders

€ **12.3** M Research and consulting with public stakeholders

## Dissemination of knowledge

**33,800** users subscribed to technical and regulatory information services

**83** training modules, including **30** new modules

# Governance and Ethics

The missions and the legal organization of the Scientific and Technical Center for Building, a public organization of an industrial and commercial nature, are set out in articles L142-1, L142-2 and R142-1 to R142-14 of the French Building Code.

There are various governing bodies at the CSTB.

- ▶ Learn more about the governing bodies: <http://www.cstb.fr/cstb/organisation/instances-de-gouvernance/>
- ▶ Meet the members of the management board: <http://www.cstb.fr/rapport-activite/2016/en/>

The **board of directors** consists of 27 members appointed by a ministerial order:

- ▶ 2 members of Parliament
- ▶ 6 government representatives
- ▶ 4 representatives of local authorities and their institutions
- ▶ 6 qualified experts
- ▶ 9 employee representatives

The **executive committee** of the CSTB determines the strategy, oversees, and organizes the management of the CSTB in line with the Objectives and Performance Contract.

### Members include:

- ▶ **Étienne CRÉPON**, president
- ▶ **Charles BALOCHE**, Deputy CEO in charge of Technological Activities
- ▶ **Hervé CHARRUE**, Deputy CEO in charge of Research and Development
- ▶ **Sylvie RAVALET**, Deputy CEO in charge of Strategy and Finance
- ▶ **Florence FERRY**, director of communications and external relations
- ▶ **Rémi LETEINTURIER**, director of human resources

## VALUES

The CSTB is committed to upholding, as a promoter of innovation and a trusted third party, the Ethics Charter that describes the shared values of all CSTB employees.

1. Impartiality of judgment
2. Social responsibility
3. Transparency
4. Sharing and confidentiality
5. Duty to alert
6. Scientific and technical quality

- ▶ Discover the Ethics Charter: <http://www.cstb.fr/cstb/deontologie/>

# CONTACTS

## Head office

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**LUCIOLE**

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# Building the future

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